

DRAWINGS ATTACHED

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(54) CLEANSING APPARATUS

(71) I, KLAUS PETER ERNST, a German citizen, of 29 Wilhelmstal, 5608 Krebsoge/Rhineland, Germany, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to an apparatus for cleansing, and more particularly is concerned with an apparatus for cleansing the human body, for example in the form of a brush for personal hygiene.

When washing or taking a shower, a brush or a sponge is normally used, in combination with a piece of soap. The soap is first of all passed over the moist skin, so as to loosen dirt, whereas the actual removal of the latter is effected by mechanical means, i.e. by rubbing with the brush or the sponge. On taking a shower, it is, for example, disadvantageous if the soap and the brush are used one after the other, since the soap is rapidly washed off due to the continuous action of the spray of water, so that the desired combination effect of soap and brush is not achieved.

Separate manipulation of soap and brush or of a sponge is, however, also disadvantageous both when washing and when taking a bath, since it is necessary continually to change from the one to the other of these two articles and, when doing so, the soap may readily slip into the bath water where it can only with difficulty be retrieved.

According to the present invention, there is provided an apparatus which comprises a stiff base plate having one or more cleansing elements arranged on one face thereof, and, disposed in the base plate, retaining means suitable for retaining a piece of soap, which retaining means can be displaced perpendicularly to the plane of said base plate, wherein at least one spring is provided which tends to urge the retaining

means in a direction towards the functional face of the cleansing element(s), the arrangement being such that, in use, a surface of a piece of soap which is retained by said retaining means and the functional face of the cleansing element(s) can simultaneously contact a surface which is to be cleaned.

By "Cleansing element" there is meant herein an object or body a superficial part of which is mildly abrasive and is suitable for rubbing against another surface which it is desired to clean. The cleansing element(s) will generally be in the form of a plurality of bristles or of a sponge.

A preferred embodiment of the invention takes the form of a brush for personal hygiene. An apparatus in accordance with the preferred embodiment of the invention may greatly simplify a washing procedure as compared with the normal and conventional mode of procedure. A piece of soap is directly secured to the retaining means within the base plate, but is not rigidly secured to the base plate itself, being displaceable perpendicularly to the plane of the base plate, so that its surface is able, independently of the degree to which the soap has been consumed in any particular case, to reach as far as the functional face (which constitutes the outer boundary) of the cleansing element(s), for example as far as the ends of the bristles. It is advantageous that the apparatus may also be used purely for mechanical cleansing, i.e. without the use of soap, if it is arranged so that the retaining means withdraws into the base plate, so that the soap no longer directly contacts the skin and only the brush or sponge is effective.

In order to be able to effect a selection between the various possibilities, it can be advantageous to further provide the face of the base plate opposite the working face with bristles or with a sponge. By exploiting the frictional effect of the brush or sponge.

the apparatus can be used in such a manner that, by choice, the material retained by the retaining means, e.g. soap, either does contact or does not contact the skin.

5 In practice, a weak spring will preferably be used to urge the retaining means in a direction towards the functional face of the cleansing element(s), so as not to urge the material, e.g. soap, with excessive force out
10 of the plane of the functional face of the cleansing element(s), thereby unnecessarily increasing the consumption of, for example, the soap. The spring allows the combination of brush or sponge and, for example, soap
15 to be used substantially uninfluenced by the oblique position of the cleansing apparatus, with the result that the force needed to apply the apparatus to, for example, the body is substantially uninfluenced by the
20 degree to which the soap has been consumed. An apparatus of this kind is especially suitable for use when taking a showerbath, since the mechanical friction of the bristles or of the sponge is exerted
25 simultaneously with the application of the soap, so that there is no danger of the soap being rinsed away too rapidly. Furthermore, when the cleansing elements consist of a plurality of bristles, the soap is always
30 applied between the bristles, and is shielded by the cleansing apparatus, so that it is not subjected, while being applied, to the spraying action of the shower.

35 Simple design and good assembly characteristics are afforded if the base plate is provided with a covering means on the side opposite the functional side. On removing the covering means, the retaining means is accessible and can be removed or guided
40 out of the apparatus. It will generally be necessary to provide means for preventing the soap from being pressed excessively far out of the apparatus, particularly when compression springs are used. In most cases
45 therefore, it is advantageous if the retaining means is accessible from the rear side of the apparatus. Furthermore, a guideway for the spring can be provided on the retaining means and/or on the covering means. This
50 is particularly advantageous when using helical springs, since the pitch of the spring cannot always be kept small relative to the length of the spring. The guideways can consist of cylindrical shells into which
55 the spring is introduced, or they can consist of pins extending in the axial direction. Furthermore, it is possible to cause the guideways to interengage telescopically. With guideways which laterally embrace
60 the spring, a good closing effect is achieved which protects the spring to a high degree against corrosion.

65 In another preferred embodiment of the present invention, the base plate is formed with a recess which has at least one groove

extending along the side of the recess terminated by a shoulder, and the retaining means is provided with a collar or projection which slides in the groove. It is the purpose of this arrangement firstly to prevent rotation of the retaining means in the apparatus and secondly to provide a buffer to limit the movement of the retaining means.

70 The retaining means can consist of two elements adapted to be disposed one against the other and one of which is connected to, for example, a piece of soap. This connection can be such that the element secured to the soap is directly secured thereto on manufacturing the soap, however, it is also possible to design the element in such
80 manner that the user may himself insert it into a ready-made piece of soap of suitable dimensions. In order to change the soap, it is not always necessary to disassemble the apparatus; it may merely be necessary to remove the soap residue, with the removable element of the retaining means, and to insert
85 a new retaining element with a piece of soap. The two elements of the retaining means can be held together in a known manner by means, for example, of a magnet, but an especially secure connection is established if the elements of the retaining
90 means are connected by means of a snap-closure means.

For a better understanding of the invention, and to show how the same can be carried into effect, reference will now be made by way of example, to the accompanying drawings, in which:—

Figure 1 shows the principle of the present invention, with reference to a cleansing apparatus shown in diagrammatic form;

Figure 2 shows, in section, an embodiment of a brush for personal hygiene according to the present invention having a rectangular retaining means and two compression springs (not to scale);

Figure 3 shows a section taken along the line III-III of Figure 2 (not to scale);

Figure 4 shows a further type of the retaining means, in the case of a cleansing apparatus according to Figure 2 (not to scale);

Figure 5 shows, in longitudinal section, a brush according to the present invention having a cylindrical retaining means; and
120 Figure 6 shows a section taken along the line VI-VI of Figure 5.

The diagrammatic illustration of the cleansing apparatus shown in Figure 1 shows that a retaining means 3 is inserted so as to be transversely displaceable in the base plate 1 of a brush. The cleansing elements consist of bristles which, in the form of illustration selected face downwardly and are designated 2. The retaining means 3 disposed in the centre of the brush carries
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at its lower end, a piece of soap 4 surrounded by the bristles 2. A spring 5, acting on the rear side of the retaining means 3, presses the soap away from the base plate 1, so that, when the cleansing apparatus is used, the soap is pressed against the body and makes contact with the body at the same time does the functional face of the cleansing elements. The spring 5 is weak, so that the soap 4 may be pressed back with exertion of only a small amount of force. Because of the spring 5, in use, the soap 4 is pressed against the skin to be cleansed regardless of the extent to which it has been used, and in this way it can be "used up" to a very considerable degree, whilst retaining the full cleansing effect of the apparatus.

Grooves 6 and 7 are formed laterally in a recess 9, in which grooves the retaining means 3 slides. These grooves, however, do not extend the full depth of the recess in the base plate, but terminate in collars 8. Shoulders 10 are provided on the retaining means 3 which engage in the grooves and, in the inoperative state, about the collars 8. The cleansing apparatus is in this condition, i.e. with the spring 5 substantially dimensioned when it is not subjected to the influence of external forces.

Figures 2 and 3 show a practical embodiment of the cleansing apparatus according to the present invention. Inserted into the substantially rectangular aperture in the centre of the base plate 1 manufactured from a plastics material, is a retaining means 13, also made from a plastics material. As Figure 3 shows, the cross-section of the retaining means is so dimensioned that it just fills an aperture 11, so that it is able to slide in the aperture without any danger or tilting. The retaining means 13 has two upright hollow cylinders 14 serving as guides for helical springs 15, disposed on its base plate 12. The helical springs 15 bear against a cover plate 16 which closes the upper face of the base plate 1 and which, for the guiding of the springs, is also provided with cylindrical projections 17. With this type of structure, and advantageous ratio of the length of the springs 15 in a relaxed condition to that in a compressed condition is achieved.

Provided at the underside of the base plate 12 are inwardly extending webs or lands 18 which can engage in soap 19 and retain it on the retaining means 13. Furthermore, grooves 20 are formed in two opposite sides of the aperture 11, in which grooves collars 21, of the retaining means, slide. The grooves 20 are delimited at their lower end by shoulders 22, thus preventing the springs 15 from pressing the retaining means 13, with the soap 19, out of the apparatus.

Whereas in the embodiment shown in Figure 2 the soap is directly held by the retaining means 13, Figure 4 shows an alternative design for the retaining means 13. The base plate 12 is here substantially planar and is provided with downwardly projecting snapping-in strips or rails 25 which engage in correspondingly shaped recesses in a retaining element 26 in the manner of a snap-closure means, so that the retaining element 26 can be releasably connected to the retaining means 13. In this embodiment, the retaining element 26 is secured, by webs or lands 18, to the piece of soap. The attachment of the retaining element 26 to the soap 19 may be effected during the manufacture of the soap, so that the soap 19 is sold together with the retaining element 26. It should also be mentioned that, advantageously, all the essential parts or elements of the cleaning apparatus are manufactured from a plastics material.

A further embodiment of the present invention is shown in Figures 5 and 6. The base plate 1 has, here, a substantially cylindrical bore 30 in which a correspondingly shaped retaining means 31 is disposed. In this case also, there are grooves 32 having delimiting shoulders 33, and the retaining means is provided with corresponding collars 34. A single spring 35 is disposed, centrally, in a guide cylinder 36 of the retaining means 31. A tube 37, which protects the spring 35 and is attached to a covering plate 38, engages telescopically into the guide cylinder 36.

The design of the soap 39 and of the retaining means 31 are mutually arranged so that the soap 39, with the retaining means 31, can extend into the aperture 30. The soap 39 is provided, in known manner, with a metallic element 40 made from a ferromagnetic material, which metallic element is attracted by a permanent magnet 41 attached to the underside of the retaining means 31. In this way, adequate securing of the soap 39 and the retaining means 31 is achieved, and it should be further noted that the soap is also guided or retained laterally by the bristles 42 or by the aperture 30.

In the embodiment last described, it may be expedient to use a helical spring 35 the diameter of which is such that it completely fills the entire retaining means 31, so that it becomes possible to dispense with the supplementary guide cylinder 36.

The apparatus of this invention can be used for a variety of purposes other than those specifically disclosed.

WHAT I CLAIM IS:—

1. An apparatus which comprises a stiff base plate having one or more cleansing

- elements arranged on one face thereof, and, disposed in the base plate, retaining means suitable for retaining a piece of soap, which retaining means can be displaced perpendicularly to the plane of said base plate, wherein at least one spring is provided which tends to urge the retaining means in a direction towards the functional face of the cleansing element(s), the arrangement being such that, in use, a surface of a piece of soap which is retained by said retaining means and the functional face of the cleansing element(s) can simultaneously contact a surface which is to be cleaned.
2. An apparatus as claimed in Claim 1, wherein the apparatus is a brush for personal hygiene.
3. An apparatus as claimed in Claim 1 or 2, wherein the base plate is provided on the face opposite said one face, with a covering means.
4. An apparatus as claimed in claim 3 wherein a guideway for the or each spring is provided on the retaining means.
5. An apparatus as claimed in Claim 3 or 4, wherein a guideway for the or each spring is provided on the covering means.
6. An apparatus as claimed in Claims 4 and 5, wherein the retaining means and the covering means have guideways, and wherein the guideways interengage telescopically.
7. An apparatus as claimed in any one of Claims 1 to 6, wherein the base plate is formed with a recess having at least one

groove extending along the side thereof and terminated by a shoulder, and wherein the retaining means is provided with a collar, such that said collar slides in said groove.

8. An apparatus as claimed in any one of Claims 1 to 7, wherein the retaining means comprises two part or elements adapted to be placed one against the other and one part or element of which serves to hold the soap.

9. An apparatus as claimed in Claim 8, wherein one element of the retaining means is made from a permanently magnetic material and the other element is made from a ferromagnetic material.

10. An apparatus as claimed in Claim 8, wherein the elements of the retaining means are connected by means of a snap-closure device.

11. An apparatus as claimed in any one of the preceding claims, wherein the one or more cleansing elements comprise a plurality of bristles or a sponge.

12. An apparatus substantially as hereinbefore described with reference to, and as illustrated in, the accompanying drawings.

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FIG. 1

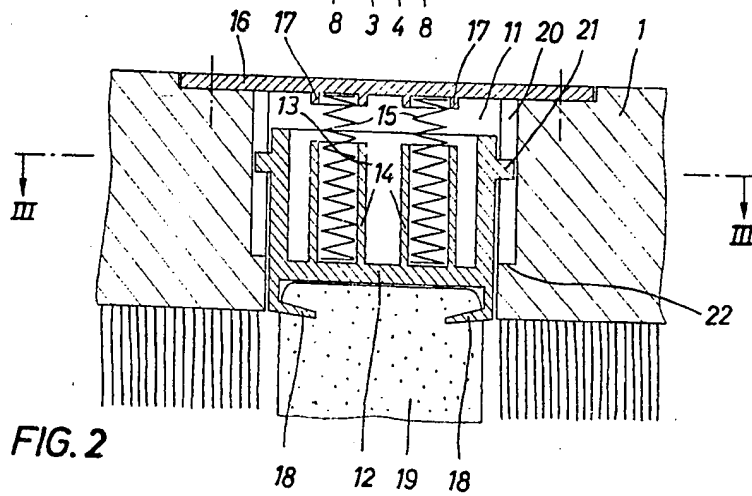
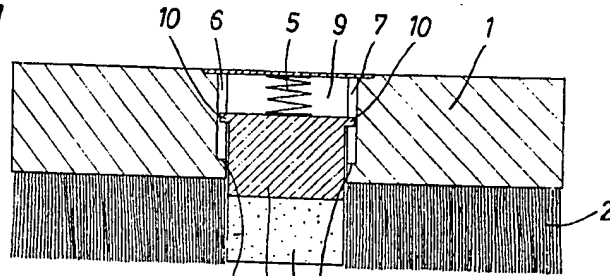
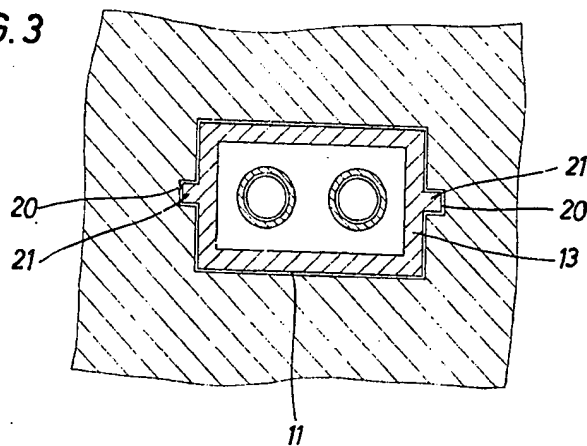


FIG. 2

FIG. 3



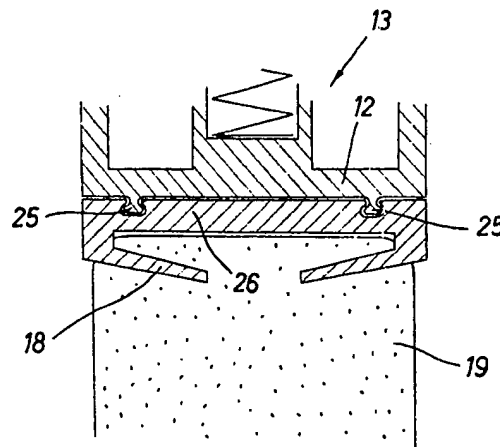


FIG. 4

